Notebook, N-01-04-24

This notebook covers the period April-October 1901. At the beginning of the book are notes by Edison regarding storage batteries, including entries detailing the use of cells by the Edison Electric Illuminating Co. of Brooklyn. Most of the book contains an enumerated log of 551 nickel grid experiments. The entries are primarily by unidentified experimenters, although there are some entries by Edison. Only the pages that include the Edison entries, experiment numbers 1-36 and 477-509, have been selected. Inserted into the book are two loose pages containing Edison's plans for an iron ore separation plant, probably in the Dunderland region of Norway, along with several pages of notes by Edison relating to the nickel grid tests. The front cover is marked "April 01." The pages are unnumbered. Approximately 100 pages have been used.

61115
191
1
227

apl 24 1901

Information on 12 12000 Hp—
Chloride Cells— Edison Illuminating Co
Bklyn—

The contracted to take Cells for boats
on repair for 5 yrs at 6% but
1 immediate contract yet will be given
that period —

2 Started to clean battery of
150 Cells at one of the stations
& not weak — after 3 yrs
run got out of every of cells
one tax of mud sold it for $20
per ton —

3 Tests made within last 60
days shows

3 Heal Battery guns

5570 Hp hours on 10 hour discharge rate
2240 " " " one " " "

Co

Weight of 156 Cells across 3 wire system
2400 lbs Each — Weight of plates
1400 " "

Paid $60,000 for the act,
Act up - or 16 c lb for plates Cell
Liquid + all Complete

Weight per Hp hour 10 h discharge rate 67 lbs
" 3 " 107 "
" 1 " 166 "
"

Economy at 10 hour discharge rate 78%
" 3 " 60 "
" 1 " 52 "

One set Gottens take up 30×60
~~but~~ 1800 sq ft but 1500 would do

The have one man on to run whole
set frequently, he runs distilling water
= have use high price acid

Worst troubles is with wooden cells
all rotten Can stick Can thru them
worst on top – Cover cell with
Corrugated glass it spits from
growing ends wood Good at top
lead don't leak – all wooden tanks
rotten – They keep painting them (and prop)
got big ventilator in room

Bardow says ideal battery would be

1st Charge quick rate
2 discharge " "
3 Depreciation
4 High efficiency
5 Space for Co or Opposition
6 Non Corrodible retainers

~~Hahn of Sales Battery at 4 Ampere each 1800 Hours~~

2 1/2 lb for plates without tank.

Cement

Shall require 563 Inc burning
106 not burning 75 Enclosed
are -

Nickel Grid Experiments - [Reg graphite 30 on 50.]

1st 15 on 20 graphite, wet usual way with 20% KOH — 644 — Roff

1½ Same as #1 Except 842

2nd 15 on 20 graphite wet with Water only 644 Roff

3rd 15 on 20 graphite wet with 20 KOH, Very muddy — 644.

3½ Same as 3 but 15% Sod Ammonia ground stuff put by finger — moistened by hand. 2 drops [illegible] it —

4th 50 on 80 — graphite — wet in usual way with 20% KOH 644 Roff

5 ~~3~~50 on 80 graphite wet with Water only 644 Roff

Asbestos Nickel

6th ~~[illegible]~~ — 30 on 50 — wet regular KOH, 644 but the Nickel ground Coarse 4-To pass 100 mesh Roff

7th Same as 6th but nickel ground a long time + made exceedingly fine — Roff

8th Same as 7th but KOH solution very muddy Roff

2nd 13 Lbs good

9th = 30 on 50 graphite 5% KOH made up of 20% ground finer desired mixture — 644

10th = 30 on 50 graphite 2% KOH, fine ground nickel mixed with graphite + enough solution put in to make it much so it can be stirred & then dried over gentle heat till Edison 30 when you are ready to make the mixture 644

11 = 30 on 50 grade 644 - wet the graphite first with 20% — solution only was enough to just dampen the graphite & cause it to cake together between fingers, then add finely ground nickel & stir it only dont roll —

12 = Same as 11 but rolled

13 - 30 on 50 — solution of gum tragacanth — 5% KOH, 644 nickel ground fine + mixed to paste + dried - Tragacanth stick like glue

14 30 on 50 – 6.4 = ~~[illegible]~~ work up by finger in Water the Nickel mass 10% Solution of Ammonia in Water – when this pulp put in grafitti gradually working lumps out with finger & finally get it stiff & can dry it –

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15 16 on 20 – 7.3. mixed regular 2nd Batch ni moist 20% K.O.H, Rolled

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16. 30 on 50 – 7.3. mixed reg way 2nd Batch ni moist 20% K.O.H, Rolled

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17 50 on 80 – 7.3. mixed reg way 2nd Batch ni moist 20% K.O.H Rolled

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No 18 Peroxide 1st lot made by aylsworth & marked 501 – ~~[illegible]~~ chlorid in bottle liquid – etc – Brown hard, metallic like dust – attracts powder like my 1326 lot – No 18 in 6 ~~[illegible]~~ 4 grs 30 on 50 20% KOH Rolled
Rolled

No 19 Same as 18 Aylsworth No 1 –
Cut of nickel & graphite – Rolled

No 20 Same as 18 – 6 & 4 – wet very
muchy with KOH, then are dried
& the decomposition just sight & then
Rolled – The idea is to get nickel
swelled up before it goes in grid so it
will not swell afterwards.

No 21 #2 Aylsworth ground very
fine 30 on 50 graphite 6 & 4 moist
20% K.O.H. [illegible]
#117

#22 #2 Aylsworth ground very fine
30 on 50 graphite boiled in 20% K.O.H.
for one hour. then washed and dryed
6 & 4 moist 20% potash
#118

#23 Refin # 14 Same 30 on 50 graphite
Refined 8 & 2 moist 20% K.O.H.
Reg way rolled
#119

#120 #24 Rofn #15 30 on 50 plumbago refined
8+2 moist K.O.H. reg rolled

#121 #25 Rofn #16. 30 on 50 plumbago refined
6+4 moist 20% K.O.H. rolled reg

#122 #26 Rofn from 7A 30 on 50 plumbago refined
6+4 moist 20% K.O.H. reg rolled

#123 27 Rofn from #7A 30 on 50 plumbago refined
7+3 moist 20% K.O.H. reg rolled
97/100.

#124 28 Aylsworth #3 N. 30 on 50 plumbago refined
6+4 moist 20 K.O.H. reg rolled

#125 29 Aylsworth #4 N. 30 on 50 plumbago refined
6+4 moist 20% K.O.H. reg rolled

#126 30 Aylsworth #5 30 on 50 plumbago refined
6+4 moist 20% K.O.H. reg rolled

#31 Sylvester H 6 30 on 50 flake graphite refined
6 + 4 moist 20% KO_2H_2 reg rolled
#1/27

#32 Raphi Ni #17 30 on 50 graphite refined
6 + 4 moist 20% KO_2H_2 reg rolled
#1/28

33 = 2nd 13 lb Lot. 6 + 4 30 on 50 20% KOH
Rolled but 1/2 the graphite used to roll
the other half put in & mixed so it
was covered with the black oxide by
rolling but act as a Conductor —
powdered fine —
#1/29

No 34 2nd 13 lb Lot 6 + 4 30 on 50 20% KOH
powdered fine & heated to 212 for
for an hour — 4.72 117/1000
#1/32-1/30

No 35 Raphi 18 30 on 50 graphite refined
8 + 2 moist 20% KO_2H_2 reg rolled
#1/31

No 36 Ni by magnesia 30 on 50 graphite refin
6 + 4 moist 20% KO_2H_2 reg rolled
5 lb bad lot not Chloridinated
#1/33

change 2 at 150 not
[illegible] & same as below

Chg 300 –
[illegible]
[illegible] at 300 at first
1 at 300 on 2nd
1 at 150 on 2nd

982-983 477 aylesworth # 43 Fe 2.28 graphite
moist K.O.H. 200 rolled [illegible]
6.5g 108/1000

984-985 478 Rosin 75 Fe moist K.O.H.
rolled
6.9 108/1000

986-987 479 Cadmium 8g. 2.28 graphite 2.g.
rolled
6.6g 103/1000

988-989 480 Rosin # 75 Fe Nickel plated
graphite 2.g Fe. 8g.
6.8 102/1000

990-991 481 Copper oxide 8.g 2.28 graphite
2g rog rolled moist K.O.H.
7.9 99/1000

992-993 482 Rosin 75 4 offices –
Fe only dry pressed 100 atmos
mixed in grid 100 atmos
5.5g 113/1000

2 of these –

996 483 75 Rofn – Fe only – [illegible] pressure
two atmospheres – funed 150 atmos – Dry press
30 kept first one at 300 second
" " 150 " 5.5 g 108/1000

997 484 Rofn 75 Fe moist KOH.
7 g Fe 2 g graphite 1.9 Carbonate
ammonia 6.7 g 113/1000
dryed on heater

998 485 Rofn 75 Fe pressed dry
then wet gently with H_2O &
left for 2 hours 5.5 g 112/1000
to heat

1000 486 Rofn 75 Fe 8 parts Fe 2 parts
Carbonate ammonia pressed
dry
6 g 129/1000

999 487 aylesworth #49 Fe dry pressed
put in Vacuum 5.5 g 100/1000

1001/1000

488 aylesworth #46 Fe 228 graphite
moist K.O.H. 20g rolled 8 & 2
2 of this 6.2 103/1000

1003/1004

489 aylesworth Fe 49 Dry pressed
7.g 121/1000

1005/1006

490 aylesworth #49 Fe 228 graphite
moist K.O.H. 20g rolled 8 & 2
6.5.g 100/1000

1007/1008

491 aylesworth #53 Fe Dry pressed
Coke 150 } atm
Grid 225 } atm 8.5.g 107/1000

1009/1010

492 aylesworth #54 Fe dry pressed
Coke 150 } atm
Grid 225 } atm 2 of this 7.g 115/1000

1011/1012

493 aylesworth 54 Fe 228 graphite
moist K.O.H. 20% 20g rolled 8 & 2
56 coke } atm
100 grid } atm
2 of this 6.3.g 103/1000

1013
1014

494 aylesworth #61 Fe Dry pressed

Coke 100
Grid 150 } atm

5.g

105/1000

1015
1016

495 aylesworth #62 Fe Dry pressed

Coke 100
Grid 150 } atm

5.g

110/1000

1017
1018

496 aylesworth #63 Fe Dry pressed

Coke 100
Grid. 150 } atm

5.39

111/1000

1019
1020

497 aylesworth #65 Fe Dry pressed

Coke 100
Grid 150 } atm

7.g

108/1000

1021
1022

498 aylesworth #66 Fe dry pressed

Coke 100
Grid 150 } atm

5.g

104/1000

1023

499 aylesworth #67 Fe dry pressed

Coke 100
Grid. 150 } atm

5.5 g

113/1000

1024 X 500 aylesworth #68 Fe dry pressed

Cake 100 } atm
Grid 150 } atm 2.2 g 61/1000

1025 1026 501 aylesworth #64 Fe dry pressed

Cake 100 atm
Grid 150 atm 5.9 g 110/108/1000

1027 502 No1 Edison 72C Roofn Dry pressed – no graf
wet with water by spraying but
worked bad & no wet uneven
5.5.g Cake 100 – Cake wet before grid
111/1000 tunel 150 in grid – got very hot
Dried 2 hours – 220 pm water

1028 503 No2 Edison 72.C Roofn – Dry pressed no graf
wet with brush very wet so it crumbled
little not hot probably due to heat
so much water can't get in
dried 2 hours – wet at 220. 5.5.g
109/1000

1029 504 No3 Edison – 72C Roofn Dry pressed no graf
wet with 2 brushfuls H2O each side, Hot
after few minutes, wet at 220.
5.5 g 113/1000

1030 505 No 4 72 C Rafin Dry process no grab
wet 2 boards full including along side Farmers Subject
wet-d 220 - got hot - 5.5g 113/1000

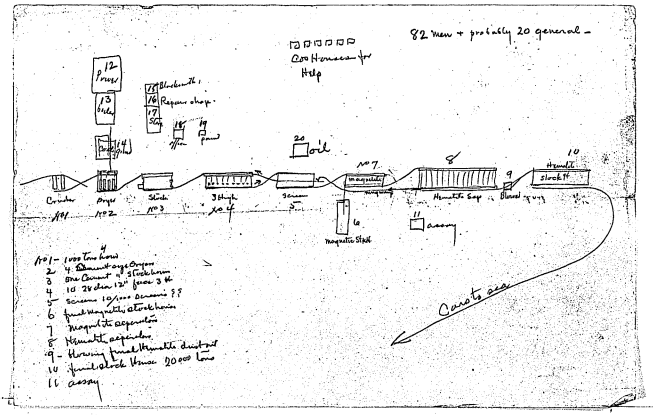
1031 1032 506 aylesworth # 69 Fe dry pressed
Coke 100
Grid 150 7.g 109/1000

1033 507 72 C Rafin - Dry process no grab
100 pressure put in Cup 150 press
dipped in distilled water 6
Seconds — dried all night
5.5g 109/1000

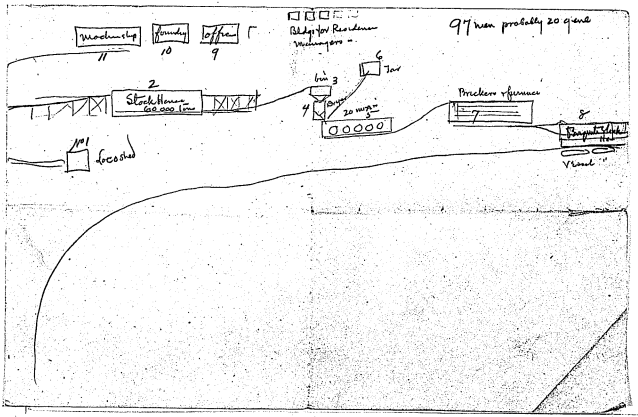
1034 508. 72 C Rafin Dry process no grab
100 press put in Cup 150 press
dipped in distilled water
one minute. Dried all night -
5.5g 111/1000

1035 1036 509 aylesworth # 70 Fe dry pressed
Coke 100
Grid 150 5.g 109/1000

[ITEM FOUND IN BOOK]



[ITEM FOUND IN BOOK]



[ITEM FOUND IN BOOK]

Fred Ott =

Did you make the beam to jar the cell and how does it work & test, Keep me posted about it = Send Curves of tests & amount stuff coming out, I am anxious about this test

E

[ITEM FOUND IN BOOK]

Friday Oct –

go ahead & use lot No 75 of
Rafno Iron – I want to drop
nickels now & go on experimenting
with Iron in little grids –

No 1 = No 75 Iron – 8 parts graphite
2 parts wet with water & mixed by
10 passes through Rolls

No 2 Same with 80 passes
through Rolls

No 3 Same with 60 passes
through Rolls –

No 4 ~~[illegible]~~ No 75 Rafno Iron
~~[illegible]~~ 8 & 2 graphite wet with
50% ammonia water & mixed by
60 passes through Rolls –

[ITEM FOUND IN BOOK]

No 5 No 75 Rafn Iron wet with 20% KOH 60 passes through rolls

No 6 No 75 Rafn Iron wet with Water 8 Iron 2 graphite passing through 40 on 60 mesh 60 passes through mixing Rolls

No 7 – No 75 Rafn Iron 7 parts Iron 2 parts graphite 1 part Electrolyser plumbago – water 60 passes through mixing Rolls

No 8 – No 75 Rafn Iron, pass the mass through the Crushing Rolls till it is flaked up hard, then grind this down finely till the about 50 mesh – then 842 ~~[illegible]~~ Roll on glass all way

[ITEM FOUND IN BOOK]

	Velo	Vspec	Mach	Cab 64	Cone after	
1 No 4 –	100	117	427	101	133	50 on 50 20% Kott 6+4 Rolled
" 2nd Run	107	123	337	101	133	
	86	104	417			
No 5 –	92	107	417	105	143	50 on 50 wet written only rolled 6+4
	105	123	405	105	154	
	87	102	415			
No 6	105	124	367	98	120	30 on 50 20% Koh – 6+4
	100	123	337	98	130	ground Coarse pass 100 mesh Roll –
	84	118	245			
	76	104	357			
No 7	83	113	410	101	122	Same as 6 but ground fine
	109	123	330	101	132	long time Roll
No 8	97	114	392	99	124	Same as 7 but Kott using mixing
	102	121	390	99	128	
No 9	83	104	377	103	132	30 on 50 5% Koh ground fine
	97	115	347	103	139	wet mixing 2nd batch no
						6+4

[ITEM FOUND IN BOOK]

No 10	89	104	280	97	125	30 on 50 2% KOH from ground ni mixed graft & roots def put in make thoroughly stirred Dried Sieve plate 6+4
	84	103	345	"	131	
No 11	86	114	367	103	143	30 on 50 6+4 wet graf 1st with 20% just to dampen the graf & C mass & C like lozenges then add finely ground ni stir only don't roll
	88	106	342	103	149	
No 12	107	123	350	100	133	same as 11 but rolled
	91	112	422	"	135	
No 13	88	106	340	105	137	30 on 50 Sol bromosuccin. 5% KOH 6+4 ni ground fine starts at Ti graf 6+4 =
	100	115	327			
No 14	86	102	372	109	155	30 on 50 6+4 wet by finger in mortar and 15% sal ammon work dry air dry
	90	105	350	109	164	
No 15	108	122	222	105	111	16 on 20 7+3 mixed reg 20% — Rolled
	94	112	322	"	113	
	86	105	365			
No 16	105	120	327	97	128	30 on 50 7+3 mixed reg 20% KOH — rolled
	90	103	322	97	130	
	84	104	450			

[ITEM FOUND IN BOOK]

No 17	94	108	325	95	122	50 on 50 74-3 mixed reg 20%
	86	98	317	95	123	Koh rolled
	83	105	350	95	121	
No 18	77	100	312	95	114	Peroxide 1st cyclonette
	94	110	342	95	138	6+4 30 on 50 20% Koh Rolled
No 19	83	102	397	100	122	cyclonette No 1 74-3 rolled
	86	103	397	100	153	
No 20	106	122	200	100	124	Same as 18 6+4 wet mixed Koh 20% air Dried Rolled Idea got in swelled up before passing
No 21 - cyclonette	87	103	467	100	147	
4	78	103	432	100	157	No 2 cyclonette ground very fine 30 on 50 grind 6+4 20% Koh Reg rolled
No 22	108	120	162	96		
	83	99	335	"	146	No 2 cyclonette very fine 30 on 50 boiled in 20% Koh 4 or 5 hours then washed & dried 6+4 mixed 20% Koh -
~~No 23~~						
No 28	80	98	297	102	143	
No 29	94	111	287	105	150	cyclonette No 3 30 on 50 refined grind 6+4 20% K rolled -
No 30	103	119	280	98	139	cyclonette 4 30 on 50 refined
No 31	92	108	227	94	135	grind 6+4 20% K Rol
No 33	90	108	327	101	142	Acetic cyclonette 5
34	88	103	325	117	117	" " 6
						30 on 50 6+4 20% K rolled Cut
						Y.G. (rolled) 20% K mixed
						30 on 50 ground 4 hours 212